



March 21, 2018

Reference No. 11103579

Mr. Bradford Billings
Energy, Minerals, and Natural Resources Department
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Dear Mr. Billings:

**Re: MF-16 Pipeline Release, 1RP-2073
2018 Groundwater Monitoring
Lea County, New Mexico**

GHD Services Inc. (GHD) submits this proposed work scope for the ETC Field Services LLC (ETC), MF-16 pipeline release site (hereafter referred to as the "Site") in Lea County, New Mexico. The MF 16 pipeline is a 16-inch natural gas pipeline located about 2.5 miles north of Eunice, New Mexico in Unit letter N, Sections 15 and 22, Township 21 South, Range 37 East in Lea County, New Mexico (Figure 1). Site coordinates are 32.472050 North, 103.153517 West. The property at the pipeline release location is owned by Millard Deck Estate and the Site is regulated by the New Mexico Oil Conservation Division (NMOCD).

1. Project History

On January 28, 2009, Southern Union Gas Services, Ltd. discovered that a release had occurred on the MF 16 inch pipeline. As indicated on the submitted NMOCD Release Notification and Corrective Action Form (C 141), approximately 25 barrels (bbls) of crude oil and 60 million cubic feet (mcf) of natural gas were released. During initial response to the release an estimated 5 bbls of free standing fluids were recovered via vacuum truck.

Initial remedial efforts were performed between February 16 and March 20, 2009 with the excavation and disposal of approximately 1,164 cubic yards (cy) of impacted soil. The dimensions of the excavation were approximately 200 feet long by 115 feet wide by 19 feet deep in some areas. During the time of the excavation only benzene, toluene, ethylbenzene, and xylenes (BTEX) and total petroleum hydrocarbons (TPH) were included in soil analyses. Chloride had not been considered during the cleanup efforts. As of March 10, 2009, laboratory analytical results for soil samples collected from the excavation indicated that BTEX and TPH concentrations were below NMOCD regulatory standards and the excavation was backfilled with clean fill.

On June 22, 2012, Site consulting duties were transferred to Basin Environmental Service Technologies (Basin). Between February 2013 and February 2014 four groundwater monitoring wells, MW 1, MW 2, MW 3, and MW 4 (see Figure 2), were installed to depths ranging from 40 to 45 feet below ground surface (bgs).



During installation of the monitoring wells, chloride in soil concentrations exceeded NMOCD regulatory standards in soil samples collected from MW 1 and MW 3. Basin performed three groundwater monitoring events of site wells on May 9, 2013, September 3, 2013, and February 28, 2014. The results of the groundwater monitoring events indicated that chloride concentrations in groundwater exceeded New Mexico Water Quality Control Commission (NMWQCC) groundwater quality standard of 250 milligrams per Liter in wells MW 1, MW 3, and MW 4 during one or more sampling events.

Site consulting duties were transferred to Apex TITAN (Apex) beginning in July 2014. Groundwater monitoring events were conducted on July 15, 2014, October 30, 2014, January 20, 2015, and April 16, 2015. An additional monitoring well, MW 5 (see Figure 2), was installed on November 11, 2014, and was incorporated into groundwater sampling events in 2015. Groundwater samples collected from Site monitoring wells during the noted sampling events were analyzed for BTEX and chloride concentrations. Results from the groundwater monitoring events indicated that chloride concentrations exceeded the NMWQCC standard in samples collected from MW 1, MW 3, MW 4, and MW 5 during one or more of the sampling events.

Site consulting duties were transferred to GHD in August 2015. In order to further delineate down gradient chloride impacts in the groundwater, GHD installed two additional monitoring wells, MW 6 and MW 7 (see Figure 2), in December 2015.

GHD performed an aquifer pump test on August 30 and 31, 2016 utilizing MW-1 as the pumping well. The pumping rate ranged from approximately 1.0 to 1.5 gallons per minute for approximately 23 hours during the test.

GHD performed two groundwater sampling events in June and December 2016. Samples were submitted to Hall Environmental Laboratory, Inc. (HEAL) for chloride analysis by EPA Method 300.0. Chloride concentrations exceeded the NMWQCC standard in samples collected from MW-1, MW-3, MW-4, MW-5, MW-6, and MW-7. During the 2016 monitoring events chloride concentrations ranged from 150 mg/L (MW-2) to 2,000 mg/L (MW-5).

GHD performed two more groundwater sampling events in May and November 2017. Samples were submitted to HEAL for chloride analysis by EPA Method 300.0. Chloride concentrations ranged from 150 mg/L (MW-2) to 2,000 mg/L (MW-5).

2. Proposed Scope of Work

GHD is proposing to perform semi-annual groundwater monitoring at the Site. Details of each task to be completed in 2018 are presented below:



2.1 Project Preparation

This task includes preparing and submitting this work plan and other project preparation activities that occur after work plan approval, but before fieldwork mobilization. After receiving authorization to proceed from ETC, GHD will:

- Coordinate with ETC to obtain access from the property owner
- Notify ETC a minimum of 48 hours prior to the commencement of drilling activities

2.2 2018 Groundwater Monitoring

GHD proposes to perform semi-annual groundwater monitoring at the Site to include collection of samples from MW-1 through MW-7. An oil/water interface probe will be used to measure groundwater depths and assess the LNAPL thickness, if any. Before and after each use, the oil/water interface probe will be cleaned with an Alconox®/deionized water solution and rinsed with deionized water.

Monitoring wells will be purged and sampled using a low flow bladder pump or hand bailed using dedicated, disposable, polyethylene bailers. Wells will be purged until field parameters including groundwater temperature, pH, and conductivity stabilize to within 10 percent or until three well volumes are removed. Field parameters will be collected using an appropriate multi parameter groundwater quality meter. Purge water generated during the monitoring events will be transported to the House Compressor Station for disposal.

Following collection, groundwater samples will be labeled, placed on ice, and submitted to HEAL under chain of custody documentation for analyses of chloride by EPA Method 300.0. The information obtained from these sampling events will be included in the 2018 Annual Report.

2.3 2018 Report

GHD will prepare a report summarizing groundwater sampling activities and submitted to ETC for review. The report will include a Site description, project history, description of field events, appropriate maps, tabulation of field and analytical data, and a discussion of results and recommendations. The final report will incorporate comments received from ETC and will be submitted to NMOCD as a final report following receipt of comments.

3. Schedule

GHD is submitting this work scope to the NMOCD for review following approval by ETC. Field work will be scheduled pending ETC approval.



GHD appreciates the opportunity to submit this work scope to assist in the management, assessment and closure of the MF 16 pipeline release site. Please feel free to contact either of us at 505-884-0672 if you have questions or comments.

Sincerely,

GHD

A handwritten signature in blue ink that reads "Alan Brandon". The signature is fluid and cursive, with the first and last names being clearly legible.

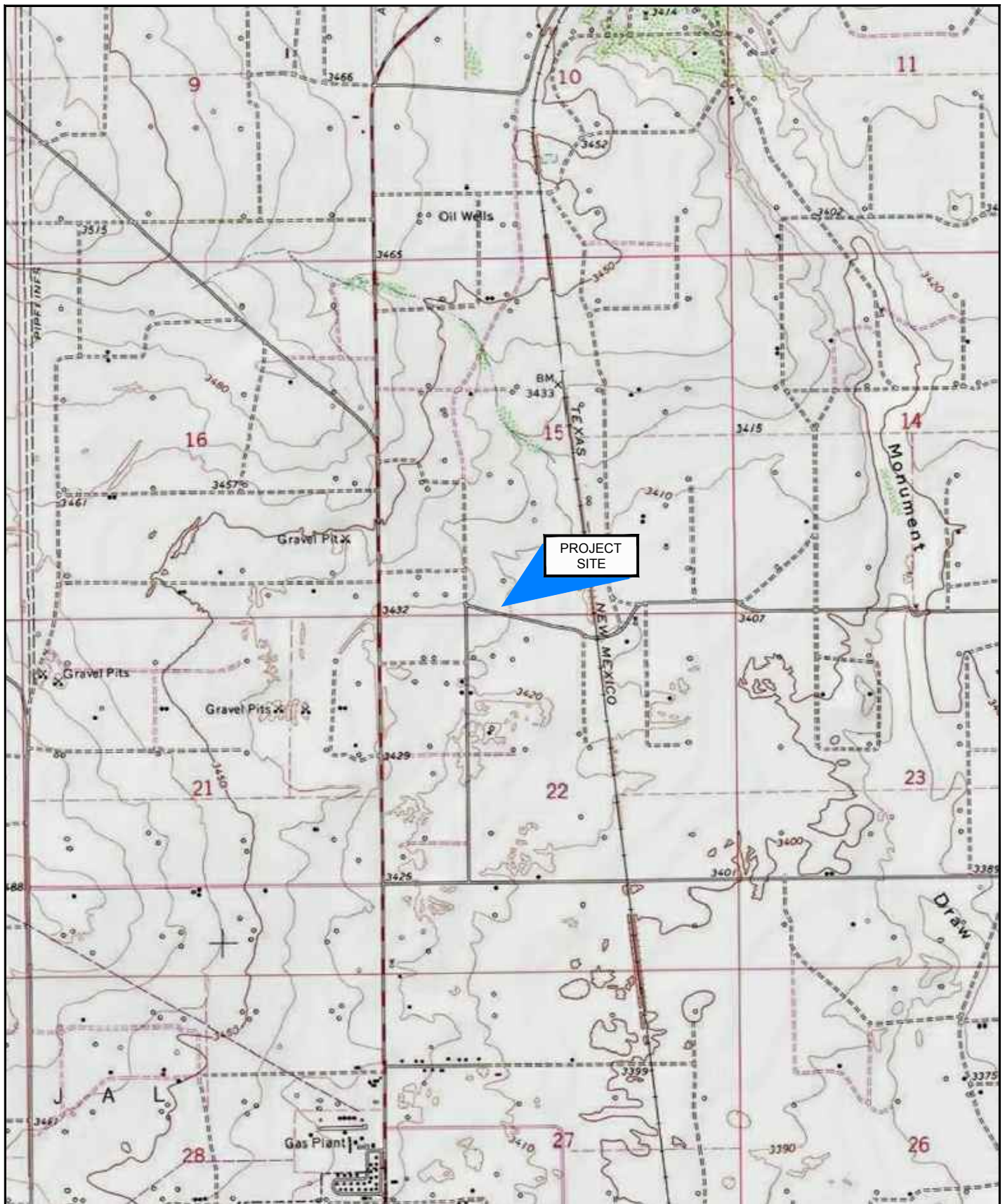
Alan Brandon
Senior Project Manager

AB/md/1

Encl.

A handwritten signature in blue ink that reads "Bernard Bockisch". The signature is fluid and cursive, with the first and last names being clearly legible.

Bernard Bockisch, PMP
Senior Project Manager



Source: USGS 7.5 MINUTE QUAD "EUNICE AND EUNICE NE, NEW MEXICO"

LAT/LONG: 32.47205° NORTH, 103.153517° WEST

0 1000 2000ft

Coordinate System:
NAD 83 State Plane -
New Mexico East (US Feet)



ETC FIELD SERVICES LLC
LEA COUNTY, NEW MEXICO
MF-16 INCH PIPELINE RELEASE

SITE LOCATION MAP

11103579-00

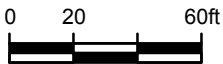
Feb 22, 2018

FIGURE 1



Source: USDA FSA Imagery, May 10, 2014

Lat/Long: 32.47205° North, 103.153517° West



Coordinate System:
NAD 83 State Plane -
New Mexico East (US Feet)



ETC FIELD SERVICES LLC
LEA COUNTY, NEW MEXICO
MF-16 INCH PIPELINE RELEASE

SITE PLAN

11103579-00

Feb 22, 2018

FIGURE 2